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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,607	07/25/2003	Harumitsu Miyashita	P23828	9354

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EXAMINER	
PATEL, GAUTAM	

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/626,607	MIYASHITA ET AL.	
	Examiner	Art Unit	
	Gautam R. Patel	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5-11-04*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/984,351.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/11/04 & 10/27/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-6 are pending for the examination.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d), in previous parent application 09/984,351, which papers have been placed of record in the file.

NOTES & REMARKS

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. For example on page 8, line 23 refers to "the conventional waveform equalizer 6", however conventional equalizer is 186 [fig. 17] not "6". Similarly page 9, line 1 refers to decoder 6 (fig.16). Fig. 16 has decoder numbered 187 not 6.

Applicant's cooperation is requested in correcting any errors of which Applicant may become aware in the specification.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-6 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,678,230.

Although the conflicting claims are not identical, they are not patentably distinct from each other because one of ordinary skill in the art would have realized that eliminating a step or an element and its function are not patentable if the function of the step is not desired as shown in Ex parte Wu, 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989). See also In re Larson, 340 F.2d 965, 144 USPQ 347 (CCPA 1965); and In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975). Patents reaching signal generator and registers are not necessary elements for the system to function as an equalizer.

As to claims 2-6, since they are also fully disclosed in the patent number 6,678,230; they are therefore considered rejected as non-statutory double patenting as set forth in the paragraphs here in above.

Claim Rejections - 35 U.S.C. § 103

5. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-2, 5-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA et al., Applications Admitted Prior Art (hereafter AAPA) in view of Song, US. patent 6,373,805 (hereafter Song).

As to claim 1, AAPA discloses the invention as claimed [see Figs. 16-22], including A waveform equalizer [fig. 17, unit 17], which has a delay element and a plurality of multipliers comprising:

a delay element [fig. 17, unit 192] that delays a propagation of the reproduction signal [specification pages 1-2];

a plurality of multipliers [fig. 17, units 193] that multiply predetermined coefficients by the reproduction signal and said delayed propagation reproduction signal [specification pages 1-2];

AAPA discloses all of the above elements, including a delay element and plurality of multipliers. AAPA also discloses automatically adaptively controlling equalizing coefficients, and how asymmetry means is used to detect marks and non-marks positions on the disc, and how they generate the coefficients. AAPA also discloses FIR filter. AAPA does not specifically disclose a detector, for detecting asymmetry that arise form the physical profiles of marks and non-marks a discriminator or a selector and calculator for calculating these coefficients.

However, it is well known in the art that asymmetrical pits are formed when disc is written and detection of marks and non-marks inherently involves detecting the physical features of the marks since marks and non-marks are physical by definition.

Also Song clearly discloses:

a detector [fig. 4, unit 50] that detects an asymmetry of the reproduction signal arising from physical profiles of each of the marks and the non-marks, said detector outputting a detection signal [output of unit 50] representing an amount said asymmetry [col. 3, line 11 to col. 4, line 17];

a discriminator [fig. 4, unit 60] that outputs a discrimination signal in response to a discrimination of the marks and the non-marks asymmetry [output of unit 60] [col. 3, line 11 to col. 4, line 17];

a calculator [fig. 4, unit 100] that calculates a first coefficient multiplied by the reproduction signal of the marks based on said outputted detection signal, said calculator calculating a second coefficient multiplied by the reproduction signal of the non-marks, which differs from the first coefficient [col. 3, line 11 to col. 4, line 17]; and

a selector [fig. 4, unit 100] that selects one of said first coefficient and said second coefficient, based upon said outputted discriminating signal [col. 3, line 11 to col. 4, line 17];

Both AAPA and Song are interested in improving the waveforms that are being generated form the disc. Both are concerned with size [physical features of the marks and non-marks and their effects on the errors, and both are generating coefficient based on marks.

One of ordinary skill in the art at the time of invention would have realized that recording errors are directly proportional to the capacity of the recording medium, and larger the capacity larger the errors. Therefore size adjustment of the land and grooves or non-marks and marks would be advantageous reduce of S/N ratio in the system.

Therefore, It would have been obvious to have used an asymmetry detectors and land/groove distinguishing stage in the system of AAPA as taught by Song because one would be motivated to reduce recording errors and increase the S/N ratio and reduce inter-symbol interference in the system of AAPA and provide better signal controls and improve quality of the signal [col. 2, lines 7-20; Song].
NOTE: control units are inherently equipped with selectors and calculators as they have to processes multiple signals at the same time.

7. The aforementioned claim 2, recites the following elements, inter alia, disclosed in AAPA:

the waveform equalizer is a FIR filter [spec. Page 3].

As to rest of the claim Song discloses:

wherein the selector changes the predetermined coefficients and changes over equalization characteristics of the reproduction signal in the marks and non-marks [col. 3, line 11 to col. 4, line 17].

8. The aforementioned claim 5, recites the following elements, inter alia, disclosed in AAPA:

waveform equalizer equalizes the waveform to have a predetermined impulse response characteristic [spec. page 6].

9. The aforementioned claim 6, recites the following elements, inter alia, disclosed in AAPA:

predetermined impulse response characteristic comprises an impulse response having (a, b, b, a) characteristics [spec. page 6].

10. Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA (Applicants admitted Prior Art) (hereafter AAPA) as applied to claim 1 above, in view of Wakabayashi et al., US. patent 6,480,447 (hereafter Wakabayashi).

As to claim 4, AAPA discloses all of the above elements, including a delay element and plurality of multipliers. AAPA also discloses automatically adaptively controlling equalizing coefficients, and how asymmetry means is used to detect marks and non-marks positions on the disc, and how they generate the coefficients. AAPA also discloses FIR filter. AAPA does not specifically disclose calculation of the absolute value of the first and second coefficient to the extent claimed.

However, it is well known in the art that asymmetrical pits are formed when disc is written and detection of marks and non-marks inherently involves detecting the physical features of the marks since marks and non-marks are physical by definition.

Also Song clearly discloses:

However, it is well known in the art size of the coefficient amplitude is related to S/N ration. Also Wakabayashi clearly discloses

An impulse response of the waveform equalizer is determined based on the predetermined coefficients, and wherein each absolute value of the first coefficient and the second coefficient is greater than each absolute value of other predetermined coefficients [col. 6, line 23 to col. 7, line 5].

Both AAPA and Wakabayashi are interested in improving the waveform equalizer and reducing the S/N ratio. Both have delay elements multipliers and other related devices for the equalizer, and both are generating coefficient based on marks.

Therefore, one of ordinary skill in the art at the time of invention would have realized that I would advantageous further reduce of S/N ratio in the system. It would have been obvious to have used a waveform equalizer in the system of AAPA as taught by Wakabayashi because one would be motivated to reduce further the S/N ratio and inter-symbol interference in the system of AAPA and provide better signal controls and improve quality of the signal [col. 2, lines 20-25; Wakabayashi].

11. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new grounds of rejection.

Allowable Subject Matter

12. Claim 3 is objected as being dependent upon a rejected base claim, but would be allowable [subject to overcoming double patenting] if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
NOTE: Claim 3 is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose an apparatus which includes a waveform equalizer which has "a number of said predetermined coefficients is odd, and wherein each of said first coefficient and said second coefficient selected by said selector is used as a center coefficient". It is noted that the closest prior art, AAPA and Song shows a similar apparatus which has a equalizer which functions in a similar fashion. However AAPA & Song fails to disclose coefficient being odd and that each of said first coefficient and said second coefficient selected by said selector is used as a center coefficient.

Other prior art cited

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Endo et al. (US. Patent 6,335,916) "nmb..".

Contact Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.

GAUTAM R. PATEL
PRIMARY EXAMINER

Gautam R. Patel
Primary Examiner
Group Art Unit 2655

September 5, 2004